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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,150	09/20/2002	Herbert Reyes	PU2116	2771
23454	7590	03/18/2005	EXAMINER	
CALLAWAY GOLF COMPANY			FISCHER, JUSTIN R	
2180 RUTHERFORD ROAD			ART UNIT	
CARLSBAD, CA 92008-7328			PAPER NUMBER	
			1733	

DATE MAILED: 03/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

19

Office Action Summary

Application No.

10/065,150

Applicant(s)

REYES ET AL

Examiner

Justin R Fischer

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 7-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 7-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1 and 3 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. As currently drafted, claim 1 (lines 7 and 8) requires the density of the titanium alloy to be between 4.5 and 6.0 grams per cubic centimeter. The original disclosure, though, generically suggests a range of values for the volume and mass of the faceplate without suggesting specific values for the density (mass over volume). Furthermore, the original disclosure fails to describe a faceplate formed of titanium alloy and having the above noted density (use of titanium alloy is disclosed independently of the density). As such, the density requirement is seen to constitute new matter.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 7, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanishi (US 4,964,640, of record) in view of Sata (US 5,716,384, of record), Chen (US 5,403,007, of record) and Chen (US 6,494,789, of record). Nakanishi, Sata, Chen '007, and Chen '789 are applied in the same manner as set forth in the Non Final Rejection mailed on July 30, 2004 (Paragraphs 2 and 3).

As best depicted in Figure 6, Nakanishi teaches a golf club head construction in which a central member 5 having a rear cavity and a flange 5a is bonded to a base assembly 2, 3, wherein the base assembly is defined by a striking face 2 and an upper and lower head portion 1a, 3. In this instance, the striking face is integral with the upper and lower head portions. However, it is extremely well known in the golf club industry that the striking face can be separately attached to the upper and lower head portions, which are seen to constitute a periphery member (this allows the striking face to be formed of a desired material if it is different from the upper and lower head portions). Sata (Figures 1 and 3 and Column 2, Line 36 – Column 3, Line 3) provides one example that evidences the recognized equivalence between these construction methods. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to form the striking face 2 of Nakanishi as a separate component (from the upper and lower head portions) and attach it to the upper and lower head portions to define a base assembly.

Regarding the faceplate, Sata suggests that the separate striking plate is formed of a titanium alloy (Column 2, Lines 55-65) in order to improve directional stability and

Art Unit: 1733

increase carry (Column 4, Lines 25-30). As to the density of the titanium alloy, Chen '789 (Column 1, Lines 20-23) teaches that titanium alloys are formed with lower densities than stainless steel and in view of the recognized density of stainless steel (Chen '007- Column 3, Lines 15-20), one of ordinary skill in the art at the time of the invention would have expected the above noted titanium alloy to have a density between 4.5 and 6.0 grams per cubic centimeter. Lastly, applicant has not provided a conclusive showing of unexpected results to establish a criticality for the density of the faceplate.

As to the densities of the materials forming the periphery member and the central member, Chen '007 provides evidence that the materials suggested by Nakanishi (Column 2, Lines 20-30 and Lines 59+) satisfy the claimed ranges (Column 3, Lines 10-22)- as such, it would have been obvious to form the golf club construction of Nakanishi with a periphery member and central having the claimed densities. Applicant has not provided a conclusive showing of unexpected results to establish a criticality for the density of the faceplate.

With respect to the periphery member, Nakanishi suggests the exemplary use of common materials, such as stainless steel and cast iron or brass (Column 2, Lines 20-25). While the specific alloy is not expressly disclosed by Nakanishi, it is well recognized in the golf club industry that a plurality of elements are included in a vast majority of golf club head constructions. In particular, iron, nickel, and tungsten represent some of the common elements that are included in a wide variety of steel alloys used to form golf club heads. For example, Chen '789 provides one example in

Art Unit: 1733

which a steel alloy containing iron, nickel, and tungsten is used in the manufacture of a golf club head (Column 1, Lines 30-45). It is emphasized that the critical feature of Nakanishi is not the material of the periphery member but rather the inclusion of a fiber/resin central member having a rear cavity to optimize weight distribution and increase the moment of inertia. Thus, one of ordinary skill in the art at the time of the invention would have found it obvious to use the claimed alloy to form the periphery member of Nakanishi as it represents a common material that is extensively used in the manufacture of golf club heads. It is further noted that Chen '789 suggests that such an alloy eliminates the problems normally associated with stainless steel (too heavy) and titanium alloys (high cost). Also, the density of such an alloy would be expected to be comparable to that of stainless steel and fall within the range of 8-11 grams per cubic centimeter.

Regarding the mass and volume percentages of the periphery member and central member, it is clearly evident from Figure 6 and the specification of Nakanishi that the central member 5 has a volume that would be expected to fall within the broad range of the claimed invention (between 25 and 75%). Also, given the low density characteristics of the central member, one of ordinary skill in the art at the time of the invention would have expected the mass percentage of the central member to be lower than the volume percentage. This analysis also supports the volume and mass percentages regarding the periphery member (it has a considerable mass percentage due to its high density). Absent any conclusive showing of unexpected results, one of

Art Unit: 1733

ordinary skill in the art at the time of the invention would have found the broad ranges of the claimed invention obvious.

With respect to claim 3, the resin/fiber construction of Nakanishi is seen to constitute a bulk fiber molding compound.

As to claim 7, the central member can be formed by depositing a fiber/resin reinforcement (bulk molding compound) in the base assembly or by applying said reinforcement materials in sheet form (Column 2, Lines 58-63). In the latter technique, any number of layers are bonded together to form the reinforcement (back insert) and subsequently adhered to the base assembly via an adhesive (Column 3, Line 61 – Column 4, Line 8).

Regarding claim 10, while Sata only states that the striking plate is bonded to the periphery member, it is extremely well known to include adhesive to form this bond. It is noted that this position was previously set forth in the Non-Final Rejection and remains unchallenged by applicant.

5. Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanishi, Sata, and Chen as applied in claim 7 above and further in view of Jensen (US 5,584,770, of record). As set forth in the rejection of claim 7 above, Sata recognizes the well known use of a separable striking plate when forming a golf club head. In this instance, Sata generically suggests that the striking plate is bonded to the periphery member (upper and lower head portions). While Sata fails to expressly suggest the claimed bonding or attachment techniques, they are extremely well known and extensively used in the attachment of golf club components. For example, Jensen

Art Unit: 1733

teaches the use of either brazing, swaging (tool, such as a ring, is used to hold one element), or adhesive bonding to join structural components in the manufacture of a golf club head (Abstract). It is emphasized that the claimed attachment means represent the common means by which structural components are joined in the golf club industry. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to use of any of the well known attachment means to join the striking plate and the periphery member.

Response to Arguments

6. Applicant's arguments filed December 28, 2004 have been fully considered but they are not persuasive. Applicant contends that (i) the golf club of Nakanishi includes undercuts and there is no disclosure as to how to form an undercut in a base assembly with a separable faceplate, (ii) Nakanishi fails to suggest dissimilar materials, and (iii) Sata teaches away from using a central member.

In regards to (i), it would have been within the purview of one of ordinary skill in the art at the time of the invention to include recesses or undercuts in an integral base assembly or a separable base assembly. Given the desire to have undercuts and to remain consistent with the teachings of Nakanishi, one of ordinary skill in the art at the time of the invention would simply form the periphery member with undercuts, such that the bulk molding compound would flow into said undercuts and provide a strong connection with the periphery member.

With respect to (ii), Sata recognizes the equivalence of an integral base assembly (Figure 3) and a separable base assembly (Figure 1). In the latter case, the

Art Unit: 1733

faceplate can be formed of a desired material without forming entire base assembly of such a material. Sata suggests the use of a titanium alloy for the faceplate since it provides improved directional stability upon impact and increased carry. It is emphasized that the use of a separable base assembly results in cost savings since the entire base assembly does not have to be formed of a titanium alloy. Thus, one of ordinary skill in the art at the time of the invention would have found it obvious to use dissimilar materials for the periphery member and faceplate in the golf club of Nakanishi (affords the use of titanium alloy and the above noted benefits).

As to (iii), a fair reading of Sata does not suggest that a separable base assembly is incompatible with the use of a central member. While the face plate construction of Sata (including specific thickness and material) might not be preferred with a central member, as argued by applicant, the general use of a central member with a separable base assembly would have been obvious to one of ordinary skill in the art at the time of the invention (e.g. with additional titanium alloys or alternate materials). To illustrate the use of a separable base assembly and a central member (bulk molding compound), see Figures 2, 8, and 9 of Chen (US 5,198,062, of record).

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 1733

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1733

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Justin Fischer

March 9, 2005


JEFF H. AFTERGUT
PRIMARY EXAMINER
GROUP 1300